

REMARKS

Claims 5-11, 16-20, 23 and 24 have been presented for examination. Claims 6-7, 10-11, 17-18, 23 and 24 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Boyden, et al. (U.S. Published Application No. 2003/0112325) in view of Jeon (U.S. Patent No. 6,677,980). As to claims 23 and 24, the Examiner has taken the position that Boyden teaches a method and device for video conferencing between first and second locations, the first location having a first video camera and first image monitor and the second conference location having a second video camera and second image monitor wherein the first video monitor displays an image of the second video conferee and the second video monitor displays an image of the first video conferee.

The Examiner continues that the first and second conferees face first and second video cameras and first and second monitors, respectively, the improvement comprising locating the first and second video cameras proximate the first and second image monitors, respectively, such that the first video camera and the second video camera are aimed at the first and second video conferees. The Examiner notes that Boyden differs from claims 23 and 24 in that he does not teach the calculated angle between the optical axis of each video camera and the sight line established between video conferees, the angle defined by the equation recited in the subject claims wherein the angle is less than or equal to 3 degrees.

The Examiner next turns to Jeon for its disclosure of method and apparatus for correcting the gaze of an image using a single camera which teaches calculating an angle between the optical axis of each of the video cameras and sight line established between the video conferees. The Examiner concludes that it would be obvious to modify Boyden to provide an angle calculated between the optical axis of each video camera and sight line established between video conferees when that angle is less than or equal to 3 degrees.

As to claim 6-7 and 17-18, the Examiner notes that Boyden teaches video images of each of the first and second conferees as appearing upon the second and first video monitors at the second and first locations that are approximately the size of the conferees, each of the first and second video cameras characterized as having a length along its longitudinal axis and lens diameter perpendicular thereto.

Regarding claims 10-11, the Examiner opines that Boyden further teaches that the first and second video cameras are adjustably positionable upon the first and second video monitors such that the first video camera is adjustably maintained within the emotionally neutral field of the image of the second conferee appearing upon the first

video monitor and further adjustable to maintain its optical axis aimed at the eyes of the first video conferee and the second video cameras adjustably maintained within the emotionally neutral field of the image of the first conferee appearing upon the second video monitor as further adjustable to maintain its optical axis aimed at the eyes of the second video conferee, the video camera is being remotely adjustable at a distance from each camera location. The Examiner notes that Boyden differs from claims 5 and 16 in that although the reference shows conferees located a distance from each conferee's cameras as shown in Fig. 1, the reference does not explicitly show that conferees are located approximately 2-8 feet from each conferee's camera. However, the Examiner has concluded that it would have been obvious to one of ordinary skill in the art to modify Boyden's system to provide this to suit particular situations in a video conference situation to meet user needs.

The Examiner has also rejected claims 8-9 and 19-20 under 35 U.S.C. 103(a) as being unpatentable over Boyden in view of Jeon as applied to claims 23 and 24 and further in view of Nixon et al. (U.S. Patent No. 6,806,847). The Examiner relies upon Nixon for disclosing a portable computer in a process controlled environment which was a camera lens having a diameter in the range of .25 to .50". The Examiner has thus concluded that it would be obvious to modify Boyden's system to provide first and second video cameras characterized as having a lens diameter no greater than approximately 0.47"/0.28" as this arrangement would facilitate providing required diameter lenses to meet the application requirements as taught by Nixon.

As the Examiner is well aware, Boyden was previously cited against the claims of the present application. Boyden does not suggest creating an angle between the optical axis of each video camera and sight-line established between the eyes of video conferences as recited in both independent claims 23 and 24. Boyden only suggests "an apparatus for receiving light for conversion to a video signal from a position proximate an eye-level of a person viewing a display." See the preamble to claim 13. The invention of Boyden is to employ a bendable coupling coupled to an image receiving device, the coupling having a stiffness selected to support its distal end at a plurality of positions. Again, the positioning of a suitable image pick up means is not of concern to Boyden as the applicant is completely silent on this salient feature. As long as Boyden's cameras are aimed at the first and second video conferences, Boyden's contribution to the art has been realized. In this regard, Boyden teaches away from the present invention in not recognizing the criticality of camera positioning with respect to the video conferences and their line of sight to the video monitors.

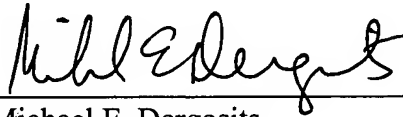
In an attempt to teach this deficiency, Jeon has been cited. However, the complexity of Jeon again more supports the patentability of the present application than renders it obvious. Specifically, the present application is able to provide enhanced video imaging by the judicious placement of first and second video cameras with respect to line of sight of the conferees. When the present application was originally filed, this critical feature was claimed in terms of camera placement at an emotionally neutral field of the image of each video conferee. In an attempt to quantify this characterization, the algorithm suitable for this purpose was specifically recited in claims 23 and 24. As such, in order to achieve the goals sought herein, one need only provide a camera at a suitable angle and in the proper position such that the angle between the optical axis of each of the video cameras and line of sight establish between the eyes of the video conferences is less than or equal to 3 degrees. Although Jeon may recognize the need to improve upon existing video conference techniques, Jeon's "solution" is exceedingly complex and teaches away from the elegantly simple solution provided by the present application. Jeon teaches the need to analyze an input image from a camera to determine a gaze deviation value formed between the viewing direction toward the camera and the object viewing direction. This is done by analyzing an image captured by the camera and comparing it to a corresponding point coordinate of the input image as to a particular coordinate value of the corrected image whereupon a pixel value of the corrected image corresponding to the calculated coordinate is obtained using the input image from the camera. Obviously, sophisticated apparatus is required to make this calculation, none of which being required in a practice of the present invention which, as noted previously, would yield substantially equivalent results. Further, Jeon makes no mention of the presently claimed angle of ≤ 3 degrees. Only applicant has taught the criticality of this value.

As to claims 8-9 and 19-20, applicant has chosen a specific camera dimension to minimize intrusion upon the video conferencing experience. Although this plays a role in practicing the claimed method, it is the positioning of the camera with regard to an emotionally neutral field and specifically at an angle less than or equal to 3 degrees above the sight line established between the eyes of video conferences that remains the crux of the invention.

For the reasons advanced above, it is respectfully asserted that the present application is in condition for allowance and such disposition is earnestly solicited.

Respectfully submitted,

Dated: October 26, 2005

By: 
Michael E. Dergosits

Four Embarcadero Center
Suite 1450
San Francisco, CA 94111
(415) 705-6377 Telephone
(415) 705-6383 Facsimile